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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/982,587	10/17/2001	Yosuke Fujii	SIW-016	7569

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LAHIVE & COCKFIELD, LLP.
28 STATE STREET
BOSTON, MA 02109

EXAMINER

RUTHKOSKY, MARK

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 04/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/982,587

Applicant(s)

FUJII ET AL.

Examiner

Mark Ruthkosky

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 1/26/2005.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Response to Amendment

The proposed reply filed on 1/26/2005 has been entered. No claims have been added or canceled.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Nishida (JP 2000-021418.)

The instant claims are to a fuel cell comprising a pair of separators; a membrane electrode assembly (MEA) including an electrolyte membrane and an anode and a cathode disposed at both sides of the electrolyte membrane with the membrane electrode assembly being held by the pair of separators. A sealing member is disposed between the MEA and a first of said pair of the separators, the sealing member including a circumferential portion surrounding at least a portion of the circumference of the first separator, and an extended portion seamlessly

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connected to and extending from the circumferential portion to an end portion of the extended portion over a surface of the separator. A reactant gas channel is disposed between the MEA and the first separator, wherein the reactant gas channel bends around the end portion of the extended portion of the sealing member, the extended portion of the sealing member extending along a significant portion of the gas channel in order to direct the flow of a fluid flowing there along.

Nishida (JP 2000-021418) teaches a fuel cell comprising a pair of separators; a membrane electrode assembly (MEA) including an electrolyte membrane and an anode and a cathode disposed at both sides of the electrolyte membrane with the membrane electrode assembly being held by the pair of separators see figures 2-3 and paragraphs 28-31.) The separator is a sheet metal plate (para. 24.) A sealing member is disposed between the MEA and a first of said pair of the separators, the sealing member including a circumferential portion surrounding at least a portion of the circumference of the first separator, and an extended portion (for example, see the features of the gasket in figures 2a and 2b which extend into the interior of the plate including elements 5 and 15) seamlessly connected to and extending from the circumferential portion over a surface of the separator (see figures 1-4 and the accompanying text in the disclosure of Nishida.) A reactant gas channel is disposed between the MEA and the first separator, wherein the reactant gas channel bends around the end portion of the extended portion of the sealing member, the extended portion of the sealing member extending along a significant portion of the gas channel in order to direct the flow of a fluid flowing there along (figures 2a and 2b.) The separator plate is made of thin metals and includes a plurality of grooved channels (figures) that transfer reactants (figures 1-4 and accompanying text.) A gas-guiding groove with a turning portion and a linear portion is disclosed (figure 2a.) The gas

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channels are u-shaped with portions of the sealing material extending to and along adjacent channels to separate the channels and form turning portions.

Response to Arguments

Applicant's arguments with respect to claims 1-21 have been considered but are not persuasive. The instant claims have been amended to state that a reactant gas channel bends around the end portion of the extended portion of the sealing member in a fuel cell. This newly added limitation does not overcome the rejection based on the prior art of record.

The applicant argues that the prior art reference to NISHIDA does not teach a sealing member having an extended portion that extends seamlessly from a circumferential portion across a significant portion of a reactant gas channel and that the extended portion of NISHIDA merely extends "a nominal, non-significant distance" from one end of the circumferential portion. In addition, the applicant argues that the reference does not disclose a sealing member capable of directing the flow of fluid along the gas channel. The examiner disagrees. Figure A, for example, discloses various extending portions from the circumferential portion. These extended portions extend a significant distance as the portions form a gas path along the separator plate in order to direct the gas to flow according to the designed flow path. If these portions were not included in the flow path, a significant amount of reactant gas would flow directly to the outlet without traversing channels of the separator and the face of the fuel cell plate.

The applicant also argues that the NISHIDA reference does not disclose a seal member having an extended portion that extends seamlessly between two surface features on the first

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separator. The applicant's support for this argument is that the term "surface features" includes both grooves and protruding members, which specifies that the extended portion is not a top or bottom peripheral edge of the sealing member. The claim states that the "extended portion extending seamlessly from said circumferential portion in a longitudinal direction to an end portion of the extended direction." The extended portion of NISHIDA extends seamlessly from said circumferential portion in a longitudinal direction to an end portion. The claims further state that "the extended portion of the sealing member extends between a first surface feature on said first separator and a second surface feature on the first separator." The requirement in the claim that the connecting members extend between the protruding members on a separator is met by the reference. The extended portion extends between different surface features to form the turning portion of the channel on the separator face.

The applicant also argues that the NISHIDA reference does not disclose a gas channel that bends around an end portion of an extended portion of the sealing member. The applicant notes that the reference teaches bending around the end of separator protrusions. The newly added claim limitation does not overcome the teachings of the prior art. The gas channel does bend around the end portion of the extended portion of the sealing member. Although the bend is not directly adjacent to the end portion, the flow channel bends around the end portion of an extended portion of the sealing member as the channels are formed on opposite sides of the extended end portion as shown in figure 1. From this, the channel bends around the end of the extended portion.

With regard to claim 18, the claim states, "the extended portion separates a first linear portion of the reactant gas channel from a second linear portion of the reactant gas channel."

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This is taught in Figure 1 of NISHIDA, as two, adjacent, linear channel portions of the reactant gas channel are separated by the extended portion, as well as the protruding portions of the separator. With regard to claim 19, the claim states that a connecting path for connecting the first linear portion and the second linear portion is formed between an end of the extended portion and the circumferential portion of the sealing member. Again, this feature is taught by the sealing member and is shown between the extended end portion and the circumferential portion of the sealing member in the figures.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Examiner Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Ruthkosky whose telephone number is 571-272-1291. The examiner can normally be reached on FLEX schedule (generally, Monday-Thursday from 9:00-6:30.) If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached at 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mark Ruthkosky

Primary Patent Examiner

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Mark Ruthkosky
4/20/05

**MARK RUTHKOSKY
PRIMARY EXAMINER**